

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. The shapes are primarily triangles and polygons, creating a dynamic, layered effect. The overall composition is clean and modern, with the text centered on a white background.

# Green Architecture for Climate Change Adaptation and Mitigation

*By: Ar. Ricky Martinez*

# THE PHILIPPINES, HOW AFFECTED ARE WE TO CLIMATE CHANGE?

- ▶ The [Global Climate Risk Index 2015](#) listed the Philippines as the number one most affected country by climate change, using 2013's data.
- ▶ The Philippines also lacks natural barriers; as a collection of more than 7,000 islands there is almost nothing standing between them and the sea.
- ▶ The map also shows the regions most vulnerable to [sea-level rise](#), another detrimental effect of climate change that can be exacerbated by the storm surge from tropical storms.

- ▶ *On a larger scale , The pursuit for a greener Philippines has become more pressing as the countries most vulnerable to climate change.*



## ***SUPER TYPHOON YOLANDA***

*one of the strongest typhoons on record struck the Philippines, forcing hundreds of thousands from their homes and knocking out power and communications in several provinces.*



- ▶ *occurred at warming level below 1degree celcius*
- ▶ *Php 89 billion worth of damages*
- ▶ *6,300 lives lost*
- ▶ *28,688 injured*
- ▶ *1,062 missing*
- ▶ *3.4 million families displaced*

# ***SUPER TYPHOON YOLANDA***

*one of the strongest typhoons on record struck the Philippines, forcing hundreds of thousands from their homes and knocking out power and communications in several provinces.*



- ▶ ***Sea level rise in the Philippines is 3x higher than global average.***
- ▶ ***64 coastal Provinces***
- ▶ ***822 coastal Municipalities***
- ▶ ***25 major coastal cities***
- ▶ ***60 % of all LGU's***
- ▶ ***13.6 million Filipinos for relocation***

# *El Niño (2014 - 2016)*

- ▶ *One of the Most Severe drought ever recorded*
- ▶ *If we do not limit global warming the world's temperature would increase to 4 degree centigrade to 6 degree centigrade.*



## *Heavy Rains due to South west monsoon (2017 up to present)*



### ► ***Typhoon Karding (August 2018)***

*It turns out that more than half of the expected volume of rain for the entire month of August & September this year as the southwest monsoon was enhanced by Tropical Storm Karding (Yagi). We were expecting around 504.2 mm of rainfall for the month of, the rain was really heavy.... 270 is more than half of the climatological normal rainfall for August which is 504.2 mm.)*

*-Philippine Atmospheric, Geophysical, and Astronomical Services Administration (PAGASA) .*

- ▶ *The Aggressive pursuit for the greener Philippines is one of the advocacy that local Government are now more than eager to undertake.*
- ▶ *With the adverse effects of climate change becoming more apparent & destructive, leaders across government agencies ,private companies and United Architects of the Philippines are hard -pressed to look for ways to ensure a more sustainable ,low carbon path for their respective districts and the rest of the country.*



WHAT DOES  
**SUSTAINABILITY**  
MEAN TO YOU?

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**“EACH NEW  
SITUATION  
REQUIRES A NEW  
ARCHITECTURE.”**

**- Jean Nouvel**

# GREEN ARCHITECTURE

- ▶ *Green Architecture or Sustainable Architecture design is the philosophy of designing a building that is in harmony with the natural features and resources surrounding the site.*

# GREEN ARCHITECTURE

- ▶ *There are several key steps in designing sustainable buildings:*
  - ▶ *Specific 'green' building materials from local sources*
  - ▶ *Reduce loads*
  - ▶ *Optimize systems*
  - ▶ *And generate on-site renewable energy*

## CONSTRUCTION MATERIALS

Eco-friendly to all Living Creatures

### RENEWABLE ENERGY

Building With Best  
Utilization of  
Solar Energy

### INDOOR QUALITY

That Promotes Good  
Health and Reduce  
Impact



### BEAUTY & FRESHNESS

Building That Tells  
a Story

### WATER

Building Which is  
Water Independent

### SITE

Human Beings Have Occupied Enough  
Lands and its Time to Place Boundaries

# GREEN BUILDING FOR CLIMATE CHANGE ADAPTATION AND MITIGATION

- ▶ *It improves resource efficiency of green house gases that cause global warming and climate change.*

# GREEN BUILDING FOR BETTER BUSINESS

- ▶ *Operational savings quickly recover capital costs, innovative products, stimulate job creation, renewable energies reduce demand for fossil fuels and less dependence on oil imports leads to energy security.*



▶ **GREEN BUILDING POLICIES AND LAWS TO PROMOTE MARKET TRANSPORTATION AND COMPETITIVENESS**

- ▶ *Laws, policies regulations and programs on green building help provide a framework for a business environment that is cost efficient, environment-friendly and competitive.*



## THE GREEN BUILDING ORDINANCE OF MANDALUYONG CITY WAS ADOPTED

- ▶ *The green building ordinance that would require new buildings in the city to include environmental friendly features in their design, construction & operation.*
- ▶ *These features will promote more efficient use of energy, water and construction materials and better waste management.*



## THE GREEN BUILDING CODE PRESCRIBES MEASURES FOR THE FOLLOWING:

- ENERGY AND WATER EFFICIENCY
- MATERIAL SUSTAINABILITY
- SOLID WASTE MANAGEMENT

SITE SUSTAINABILITY

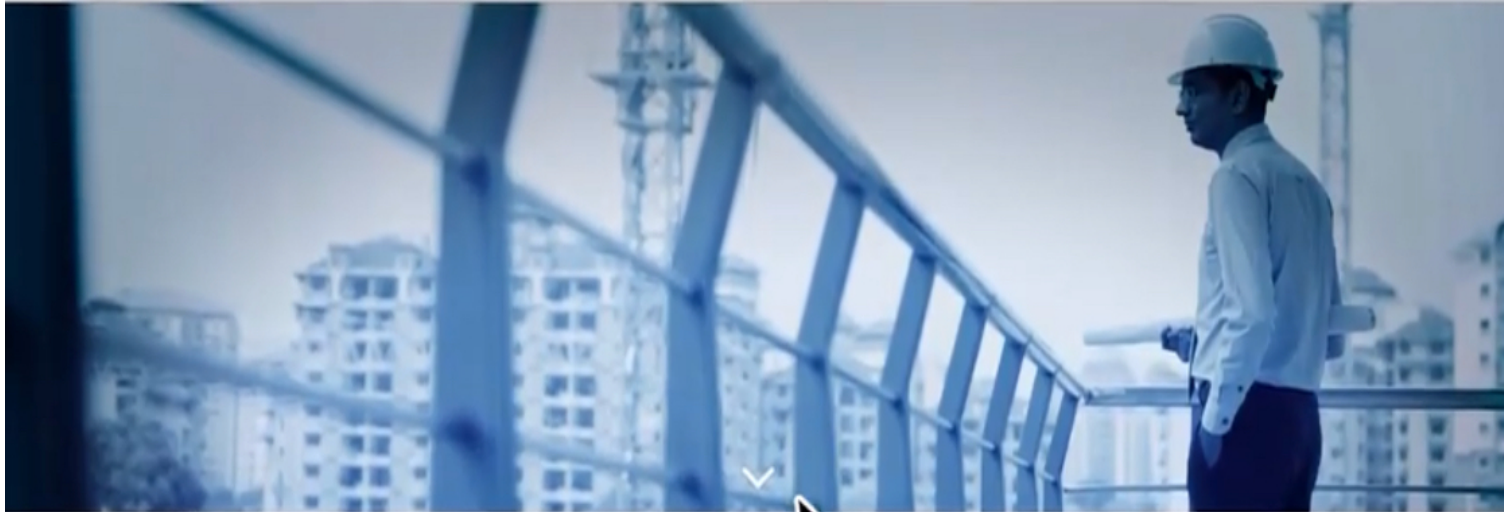
- ▶ *It will help build local capacity and private awareness for local regulations ,developers & stakeholders.*



**GREENHOUSE GAS EMISSION  
AND CHANGES IN LAND  
USE CAUSE THE INCREASE  
IN TEMPERATURE**

- ▶ *This Green building initiative will help attract environmentally responsible business to the city and make it a healthier and safer place to live and work in.*

# EDGE software.



For a small investment, EDGE certify your project and **quickly increase the marketability** of your sustainable building.

EDGE certification rewards developers who implement strategies to reduce energy and water use in their buildings, as well as embodied energy in materials. Offered at a modest cost, EDGE certification includes a preliminary certificate at the end of the design audit, and final certification after a construction audit. The preliminary EDGE certificate can be used to promote the project with the EDGE brand and develop a value proposition for customers who wish to own, rent or work in a green building.

# THE EDGE SOFTWARE

- ▶ The **EDGE software** offers a measurable way to cut back on the resource intensity of your new building project.
- ▶ It shows within the minutes how committing to a few practical energy and water saving options improves building performance at little or no cost. The numbers are brought to forefront *to reveal the most economically viable path to building green.*
- ▶ EDGE proves that the next generation of the buildings can be more profitable while making a lighter carbon footprint.

# THE EDGE SOFTWARE



- ▶ *The EDGE software can give architects and engineers access to the most efficient designs and quickly certify their works.*

# GREEN ARCHITECTURE IN THE PHILIPPINES



# NEW MMDA BUILDING

- ▶ *The collaboration between the Metro Manila Development Authority and the United Architects of the Philippines Makati Chapter revolved around the theme: “MMDA moving towards a sustainable, resilient, dynamic and people-centered Metropolis.”*



# NEW SENATE BUILDING



- ▶ *The new building must be green, secure, functional, and iconic. With the Senate having recently celebrated its first centennial, the design would be "a landmark for the Filipino people, and a design that can take the Senate of the Philippines to the next 100 more years and beyond."*

# SM MEGAMALL TOWER

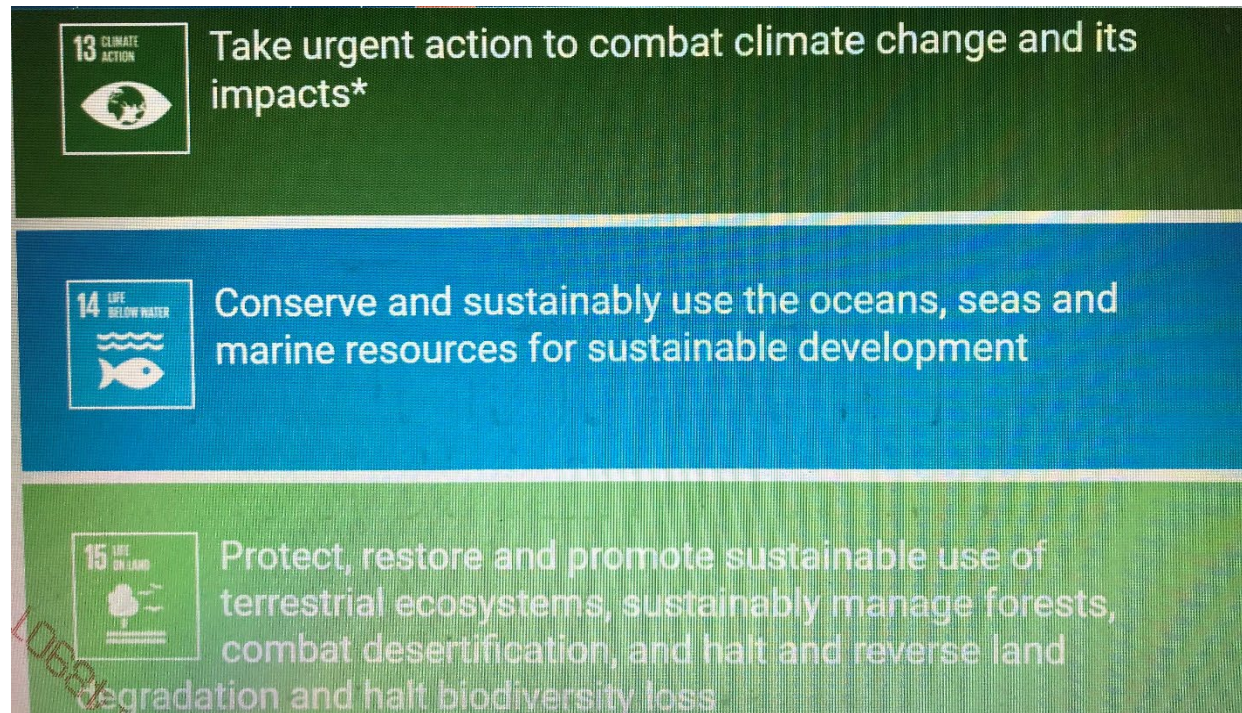


# GREEN ARCHITECTURE IN THE PHILIPPINES

- ▶ Therefore with the help of IFC International Finance Corporation provides technical advice and local governments in developing green building policies and regulations. IFC also with the private sector in promoting and implementing green building practice .The sector has a central role as it provides the capital ,suppliers building Materials, designs, constructs and operates buildings.

# TRANSFORMING OUR WORLD: THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

- ▶ Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.



**THANK YOU**

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# GREEN

buildings are a hallmark of  
economically sound

# BUSINESS

decisions; thoughtful  
**environmental**

decisions and smart

# HUMAN IMPACT

decisions.

- *Rick Fedrizzi*